Memo

To: 200 / Elka Forbes

CC: 250 Lori Levine / 250 Janine Pollack for GET

From: 250 / PGT Water Team

Date: January 21, 2009

Attachments: 2008 Fourth Quarter Drinking Water Study Sample Results

Re: Fourth Quarter Drinking Water Results for GSFC – Building 090

The Proxtronics Goddard Team (PGT) conducted quarterly drinking water testing for Goddard Space Flight Center's (GSFC) main campus. Samples were collected from the Child Development Center (Building 90). The samples were taken from the kitchen utility sink located in Room 106. The samples were collected on December 17, 2008 and analyzed for the following parameters: Alkalinity, Bacteria Analysis, Free Available Chlorine, Chloride, Haloacetic Acids, Hardness, Metals, Nitrate, Orthophosphate, pH, Sulfate, Temperature, Total Dissolved Solids, Total Organic Carbon, and Total Trihalomethanes. A report of these results is attached. Below is the discussion for parameters that did not meet targeted goals.

- The Langlier Index is an indication of the water's likeliness to corrode pipes and fittings. Building 90 was found to be mildly corrosive. Corrosion can lead to the leaching of metals into the water distributed, especially after remaining stagnant in the piping for an extended period of time, such as overnight. All metals were below the respective goals therefore the water does not appear to be sufficiently corrosive to cause the release of metals into the water distributed.

- Orthophosphate is added to the water by the water provider, Washington Suburban Sanitary Commission, at a concentration of 1,000 µg/L in order to coat the distribution system piping. This helps prevent corrosion and the release of lead and copper from pipes and fittings. Orthophosphate was found to be less than 1,000 µg/L, and is consumed during distribution. As previously stated, all metals were found to be below respective goals and do not appear to be a concern.

Results of Quarterly Child Development Center Sampling

Date	Time	Bldg	Location	Analyte	Results	Standard and Type		
12/17/2008	10:31	090	Room 106B (Kitchen)- small utility sink	Alkalinity	50,000 ug/l	ug/l	NA	Sample ID: 20081217-090
				Bromodichloromethane	11 ug/l	80 ug/l	P	
				Bromoform	<5 ug/l	80 ug/l	P	
				Chloride	30,000 ug/l	250,000 ug/l	S	
				Chloroform	34 ug/l	80 ug/l	P	
				Copper	<5 ug/l	1,000 ug/l	S	
				Degrees C	13 degrees C	degrees C	NA	
				Dibromoacetic Acid	<1 ug/l	60 ug/l	NA	
				Dibromochloromethane	2.1 ug/l	80 ug/l	P	
				Dichloroacetic Acid	11 ug/l	60 ug/l	P	
				Free available chlorine	260 ug/l	4,000 ug/l	P	
				Haloacetic acids	28 ug/l	60 ug/l	P	
				Hardness	90,000 ug/l	ug/l	NA	
				Heterotrophic plate count	<2 CFU	500 CFU	P	
				Langlier Index	-1.38 units		NA	
				Lead	<5 ug/l	15 ug/l	AL	
				Monobromoacetic Acid	<1 ug/l	60 ug/l	NA	
				Monochloroacetic acid	<2 ug/l	60 ug/l	P	
				Nitrate	1,000 ug/l	10,000 ug/l	P	
				Orthophosphate	<1,000 ug/l		NA	
				pH	6.84 pH	6.5-8.5 pH	S	
				Sulfate	17,000 ug/l	250,000 ug/l	S	
				Total Coliform	<1 CFU	0 CFU	P	
				Total Dissolved Solids	153,000 ug/l	500,000 ug/l	S	
				Total organic carbon	2,000 ug/l	ug/l	NA	
				Total trihalomethanes	47.1 ug/l	80 ug/l	P	
				Trichloroacetic Acid	17 ug/l	60 ug/l	P	

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P = Primary Standard S = Secondary Standard (Aesthetics) AL = Action Level NA = Not Applicable (No standard)